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21229/211A 3789 PCT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

HIDEYOSHI HORIMAI

Serial No: 10/556,651

Filed: January 27, 2006

For: OPTICAL INFORMATION  
RECORDING /REPRODUCTION  
DEVICE AND METHOD

Art Unit: 2872

Examiner: Audrey Y. Chang

PRE-APPEAL BRIEF REQUEST FOR REVIEWMail Stop: AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Applicant hereby request a Pre-Appeal Brief Review prior to filing of an Appeal Brief pursuant to the Pre-Appeal Brief conference pilot program published in the Official Gazette on July 12, 2005 and continued indefinitely by the notice in the Office Gazette of February 7, 2006. This Pre-Appeal Brief is being filed concurrently with a Notice of Appeal and no amendments to the claims, specification or drawings are filed with this Pre-Appeal Brief. Applicant has filed a Rule 116 Amendment in response to the Final Office Action which contained amendments; however, the Examiner indicates in his Advisory Action that the amendments will be entered and further indicates that the amendments have overcome the rejection under 35 USC 112, first paragraph of the claims 1, 7, 17 and 22.

The Examiner's rejections are based on clear error

The Examiner has rejected the claims 1 through 6, 7 through 11 and 14 through 16 under 35 USC 103 as being obvious over Orlov et al. (Patent No. 6,108,110) in view of

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Heanue et al. (Patent No. 5,940,514) stating that Orlov et al. teaches a holographic storage and retrieval system that is comprised of a first spatial modulator for spatially modulating a light from a source 16 generated an information light or signal light and a reference generator for spatially modulating a light from a source 16 and generating a reference light with a signal information light and reference light directed to an object lens with the area of the reference light at the entrance of the lens, surrounds the area of the signal or information light and it is implicitly true that the spatial light modulator for modulating information or signal light implicitly has a plurality of pixels, but does not disclose that the reference generator, disposed at the periphery of the first spatial light modulator, comprises a spatial light modulator and instead teaches that the reference generator may include a diffuser, lens, face plate or optical system; Heanue et al. teaches that a diffuser or face plate may be provided by a spatial light modulator; and it would have been obvious to one of ordinary skill in the art to replace the diffuser in Orlov et al. with a spatial light modulator of Heanue et al.

Still further in the continuation of 11, the Examiner states in the Advisory Action that "the Orlov et al. reference teaches explicitly that the reference is at the outer radial part with respect to the optical axis that implicitly includes a radial pattern".

In reply to this rejection, Applicant has carefully reviewed both Orlov et al. and Heanue et al. and respectfully submits that neither discloses that the reference light is in a radial pattern, that the traveling direction of the reference light is directed in a direction other than the optical axis or a radial pattern of the reference light is asymmetric with respect to a virtual center, all of which are limitations of Applicant's claims. In particular, Applicant directs the reviewers attention to column 4, lines 57 through 59 wherein it clearly states that the signal beam 18 and the reference beam 32 co-propagate along the optical axis 24. Still further, while the Examiner suggests in the Advisory Action that Orlov et al. explicitly teaches that the reference beam is at the outer radial part with respect to the optical axis that implicitly includes a radial pattern. Applicant has searched Orlov et al. in its entirety and has not found any of the phrases "outer radial part, radial, outer radial, or outer part" contained anywhere in Orlov et al. Applicant respectfully submits that the only portion of Orlov et al. which might have suggested this to the Examine is element 18 in Figure 3. However, Applicant

respectfully submits that element 18 is only a portion of the reference beam (see column 6, lines 34-40).

Still further, the Examiner suggests that the description in Orlov et al. states that the diffuser 28 produces a speckle beam pattern in the reference beam 32 and is thus adapted for shift speckle multiplexing and suggests that this language discloses a radial pattern. In reply thereto, Applicant respectfully submits that the Examiner is technically incorrect. In particular, Applicant respectfully submits that the reference light of Orlov et al. forms only a speckle pattern when the light scattered by the diffuser interfere. In other words, Orlov et al. discloses interference between the reference lights and Applicant respectfully submits that this is the opposite from Applicant's invention.

In addition, Applicant respectfully submits that the advantages of Applicant's invention cannot be achieved by the construction of Orlov et al. or Orlov et al. in view of Heanue et al. In particular and as exemplified by the publication submitted to the Examiner, "Analysis of a co-linear holographic storage system: Introduction of pixel spread function", the use of a reference light into a radial pattern causes reproduction of the image that is superior to a concentric pattern or a random pattern, such as is used in Orlov et al.

In view of the above, Applicant respectfully submits that the combination suggested by the Examiner is not Applicant's invention and the claims 2, 4 through 6, 8 through 10 and 14 through 16 are not obvious over Orlov et al. in view of Heanue et al.

The Examiner has further rejected the claims 17 through 25, 27 and 28 under 35 USC 103 as being obvious over Orlov et al. in view of Heanue et al. stating that Orlov et al. teaches a holographic storage and retrieval system which is comprised of a first spatial light modulator for spatially modulating a coherent light beam from a light source and generating an information light or signal light and an interference generator for spatial modulating a coherent light from the same light source as for the signal light beam and generating a reference light, the signal or information light and the reference light beam directed to a hologram medium for recording, in the recording mode, an interference pattern as the hologram on the medium and in the retrieving mode, the current light is modulated by the reference beam to generate a reproduction reference light that passes through an objective lens onto the hologram recording medium where the recorded interference pattern generates a

reconstructive light beam that serves as the return beam returned from the medium through the objective lens to a detector for detecting reconstructed signal images, but does not teach that the reference generator comprises a spatial light modulator, but does teach that the reference generator may be either a diffuser, lens, face plate or optical system; Heanue et al. teaches that a diffuser or face plate may be provided by a spatial modulator, and it would have been obvious to one of ordinary skill in the art to modify Orlov et al. in view of the teachings of Heanue et al. In reply to this rejection, Applicant would like to incorporate by reference his comments above concerning Applicant's invention, Orlov et al. and Heanue et al. In addition, Applicant has carefully reviewed Heanue et al. and respectfully submits that at column 4, line 18 it merely describes the use of a phase spatial light modulator to modulate the reference beam 22 and does not teach anything about this spatial light modulator being the equivalent of a diffuser or face plate. In addition, Applicant's review of column 9, lines 1-10 indicates that taught therein is the use of a phase spatial plate modulator in conjunction with a diffuser wherein the phase spatial light modulator generates the phase functions while the diffuser generates the encryption delays. Still further, Applicant respectfully submits that this phase spatial light modulator is provided for the purpose of encrypting the data for storage on the holographic medium. Therefore, Applicant respectfully submits that one of ordinary skill in the art would not look to Heanue et al. to teach a spatial light modulator for generating a reference light by spatially modulating light from the light source by a plurality of pixels and to spatially modulate the reference light into a plurality of radio patterns spreading radially from the area of said reproduction light in the area of said reference light by said spatial light modulator.

In view of the above, Applicant respectfully submits that not only is the combination suggested by the Examiner not Applicant's invention but also the combination suggested by the Examiner would not have been suggested to one of ordinary skill in the art. Therefore, Applicant respectfully submits that the claims 18, 20, 21, 23, 24, 27 and 28 would not have been obvious over Orlov et al. in view of Heanue et al.

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Conclusion

From the foregoing arguments and the arguments of record, Applicant respectfully submits that the claims 2, 4 through 6, 8 through 10, 14 through 16 and 18, 20, 21, 23, 24, 27 and 28 are not obvious over the arts cited by the Examiner and the rejection should be withdrawn as clear error. Therefore, it is respectfully submitted that this application is in condition for allowance and the rejection should be withdrawn.

In addition, Applicant respectfully requests a three-month extension of time so as to file an Appeal Brief on the above-identified application. Since Applicant already paid a one month extension fee of \$65.00 (Fee Code: 2251) with a Rule 116 Amendment on October 7, 2009, please charge the remaining difference of \$490.00 to QUINN EMANUEL DEPOSIT ACCOUNT NO. 50-4367.

If any addition fees are required to enter or consider this Pre-Appeal Brief, the Commissioner is authorized to charge QUINN EMANUEL DEPOSIT ACCOUNT NO. 50-4367.

Respectfully submitted,

By: 

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William L. Androlia

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